ATTACHMENT E

MARYLAND ENERGY ADMINISTRATION
EMPOWER ENERGY EFFICIENCY AND CONSERVATION BLOCK GRANT CLEAN ENERGY COMMUNITIES PROGRAM

EmPOWER EECBG Project Approval Form

The Town of Seat Pleasant has been approved to commence with the EmPOWER EECBG Clean Energy Communities project described in the Scope of Work below. The project has been determined to comply with the following requirements of the EmPOWER EECBG Clean Energy Communities program:

- Review by MEA and/or MEA's Technical Assistance Contractor to confirm that the proposed project is eligible to receive EmPOWER EECBG funds.
- Review by MEA and/or MEA's Technical Assistance Contractor to verify that the project will reduce energy consumption and/or generate clean energy.
- Review and determination by the Maryland Historical Trust (Trust) that the proposed project will have "no adverse effect" on any historic property.
- Submission of Part 1 of Attachment B: Maryland EECBG Waste Management Plan to MEA, describing the anticipated waste materials generated through the proposed project.

SCOPE OF WORK
The Town of Seat Pleasant proposes to:

- Install 271 new T-8 high efficiency Light Emitting Diode (LED) bulbs (14 Watts) replacing existing fluorescent bulb (40 Watts)
- Weather-strip 4 doors and 3 windows

Town of Seat Pleasant Municipal Center
6301 Addison Road,
Seat Pleasant, MD 20743

Central Air Conditioners

1. Products should be at least ENERGY STAR® qualified, meaning they are at least 10 to 15% more efficient than the minimum federal efficiency standard. For more information, see http://www.energystar.gov/index.cfm?c=products.pr_find_es_products
2. More specific standards include:
    a. *SEER* of 14 or greater. *Seasonal Energy Efficiency Ratio* rating is the amount of cooling output BTUs during a cooling season divided by its energy usage, measured in watt-hours. The higher the SEER, the greater the efficiency.

Air-Sourced Heat Pumps

1. Products should be at least ENERGY STAR® qualified, meaning they are at least 10 to 15% more efficient than the minimum federal efficiency standard. For more information, see http://www.energystar.gov/index.cfm?c=products.pr_find_es_products
2. More specific standards include:

a. *SEER* of 14.5 or greater. *Seasonal Energy Efficiency Ratio* rating is the amount of cooling output BTUs during a cooling season divided by its energy usage, measured in watt-hours. The higher the SEER, the greater the efficiency.
b. *EER* of 12 or greater. The *Energy Efficiency Ratio* is the ratio of the cooling effect measured in BTU per hour divided by the electrical energy input in measured Watts.
c. *HSPF* of 8.2 or greater. *Heating Seasonal Performance Factor* is the ratio of BTU heat output over the heating season to Watt-hours of electricity used. The higher the HSPF, the greater the efficiency.

REQUIRED ARRA REPORTING METRICS (as indicated below)

- ☐ Jobs (in FTE)
- ☐ Energy cost savings ($)
- ☐ Renewable Energy Capacity and Generation
- ☐ Energy Savings (by fuel type)
- ☐ Emissions reductions
- ☐ Number of buildings retrofitted
- ☐ Number of streetlights retrofitted
- ☐ Number of traffic lights retrofitted

If upon learning that the Scope of Work targets listed above may not be attainable by the sub-grantee, the sub-grantee shall immediately contact the Maryland Energy Administration Community Program Manager listed below.

Approved by: _____ Date: 5/31/2011

Dean Fisher
Community Program Manager
Maryland Energy Administration
Office 410-260-2605
DFisher@energy.state.md.us

EECBG
AUDIT REPORT

Maryland Energy

March 1, 2011

Kyrthlyn Rhoda
Town of Seat Pleasant
Kyrthlyn.rhoda@seatpleasantmd.gov

Dear Mr. Rhoda:

On behalf of the Maryland Energy Administration's (MEA) EmPOWER Energy Efficiency and Conservation Block Grant (EECBG) program, MEA Technical Assistance Team member Khepra Energy Group has performed a desk audit showing preliminary energy savings and financial analysis of energy efficiency improvements for the Town of Seat Pleasant.

This *Audit Report* presents summary information in respect to an EECBG project. Please feel free to use this information in submitting your project for MEA approval.

PROJECT DESCRIPTION & ADDRESS

1. **Project Description:** Possible Energy Efficiency/Conservation Measures (EECMs) include:
   a. Interior Lighting—Install 271 new T-8 high efficiency Light Emitting Diode (LED) bulbs (14 Watts) replacing existing fluorescent bulb (40 Watts).
   b. Weather Stripping—Weatherstrip 4 doors and 3 windows.

2. **Project Address**:
   Town of Seat Pleasant Municipal Center
   6301 Addison Road,
   Seat Pleasant, MD 20743

BASELINE ANALYSIS

1. Building Assessment

The Town of Seat Pleasant Municipal Center building is a brick type 3,000 Sq-ft building constructed in 1965. The building is primarily occupied Monday through Friday for approximately 8-10 hours per day. Evening meetings and community activities are held in the Community Center meeting room several times monthly. Replacing the existing interior light bulbs with LED bulbs would help reduce the energy usage in the building. In addition, weather stripping the Community Center's doors and windows will yield even more savings. Energy efficiency lighting and weather stripping of doors are recommended.

Energy Consumption

You provided historical electric utility bills for project address; bills provide historical consumption. Additional past consumption is also provided on the bills, allowing the compilation

of a consumption baseline. The following table summarizes the consumption data and projected savings.

Table 1: Historical Data and Projected Savings for Light Bulbs

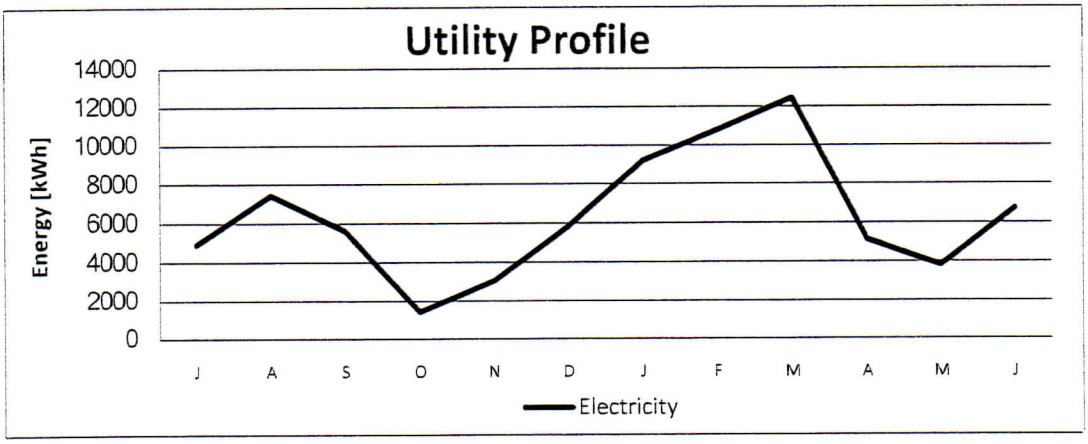
	Existing Lighting	
a.	Number of Fixtures	271
b.	Bulbs per Fixture	1
c.	Wattage per Bulb	40
d.	Hours of Operation (annual)	4200
e.	Total Annual Consumption (kWh) = {a*b*c*d÷1000}	45528
	Replacement LED Lighting	
f.	Number of Fixtures	271
g.	Bulbs per Fixture	1
h.	Wattage per Bulb	14
i.	Hours of Operation (annual)	4200
j.	Total Annual Consumption (kWh) = {f*g*h*i÷1000}	15935
k.	Total Annual Energy Savings (kWh) = {e-j}	29593

Utility Profiles

The customer is billed under PEPCO schedule 'Non-Residential-MGT-LV IIB.' This rate schedule is for customers whose maximum 30 minutes demand equals or exceeds 25 KW and is less than 1,000 KW during one or more months within a 12-month billing period.

The following electricity profile was compiled from the utility bills provided. This graph demonstrates an average monthly consumption profile for each address and form the basis from which energy savings are calculated.

Figure 1: Utility Profile



The annual consumption of electricity in the municipal center based on its energy usage history is 76,300 kWh, where 45,528 kWh is from lighting. Replacing the existing light bulbs with LED Light bulbs will yield an annual energy cost saving in lighting consumption of 29,593 kWh. It is

critical that the lighting contractor verify adequate thermal conditions before installing LED lighting. Heat sink devices may be required for achieving the expected useful life of LED lighting diode components.

It should be noted that the replacement of the existing lighting with LED lighting will effectively cause a reduction in the contribution of secondary light-based heating. This will benefit warm weather energy consumption by reducing the HVAC cooling load. The net combined benefits of the lighting replacement and weatherization EECM's are reflected in the estimated benefits shown in the following analysis.

EECBG PROJECT ANALYSIS

The analysis methodology used is consistent with the *International Performance Measurement and Verification Protocol* (www.ipmvp.org) adopted in 2009.

1. Savings Summary

The estimated costs of the project are based on the data provided by the vendors. The project cost and savings will be summarized in total. Based upon our calculations, we estimate that these investments would result in the following projected energy savings and financial benefits:

Table 4: Estimated Costs & Savings

		Light Bulbs, Doors, Windows Weather Stripping
a.	Annual energy consumption savings (kWh)	29,593
b.	Expected energy rate	$0.16
c.	Expected energy cost savings {*a*b*}	$4,734.91

2. Energy, Environmental and Economic Benefits

If you replaced the existing system with the suggested systems, installation would cost $28,000 and represent annual utility cost savings of $4,734.19. Using the $28,000 available from the EECBG grant would offset all of your costs along with the below estimated energy and economic benefits.

Table 5: Estimated Energy, Environmental, and Economic Benefits

Energy Benefits		Combined
a.	Electricity Demand Reduction (kW)	1.00
b.	Annual Reduction in Electricity Consumption *(kWh) {From estimated cost and savings table line a.}*	29,593
c.	Useful life of energy efficiency measure[1] (years)	10
d.	Lifetime Energy Savings from Source (M Btu) {(Reduction kWh * 10,000 Btus/kWh+ Reduction Therm *99,976 Btu/therm)*c / 1,000,000}	2,959
Economic Benefits		
e.	Installation Cost *($)*	$28,000.00
f.	Annual Cost Savings *($) {From estimated cost and savings table}*	$4,734.91
g.	Simple Payback *(years) {e÷f}*	5.91
h.	Lifetime Cost per Million Btu *($) {e÷d}*	$9.46
Environmental Benefits		
i.	Annual carbon Dioxide emission reductions *(kg)*	15,270.09
j.	Lifetime carbon dioxide emission reduction (Ton) {(i * c)/1000}	152.70
h.	Cost per metric ton of carbon reduced *($) {e÷j}*	$183.36

RECOMMENDATIONS

Recommended EECMs

After analyzing your potential energy efficiency/conservation measures (EECMs), **we recommend that you implement the light bulbs replacement and door/window weather stripping measures analyzed in this report at your Municipal Center.** We can confirm that the recommended EECMs are eligible to receive EmPOWER EECBG funds, are within your EECBG budget, will reduce energy consumption and/or generate clean energy, and have reasonable payback. Keep in mind EECM costs are estimates and may change after you have actual costs from contractor bids, which in turn may affect estimated payback.

If you have a small amount of EECBG funding available after recommended EECMs are approved and implemented, you may want to contact Account Manager to explore ways to spend down the total award on "loose change" EECMs—such as CFL lamps, overhead fluorescent fixtures, or exit signs; central or window air conditioners, or a gas furnace; hot water tanks, tankless water heaters, or solar water heating systems; or ENERGY STAR-rated appliances including refrigerators, dishwashers, and computers.

Next Steps

On the following page, please find a checklist of items that must be submitted to MEA in order for your project to be approved. Following MEA approval, your Account Manager will work with you on Post-Project Approval steps. Please review Addendum D of your ARRA Addendum to the EECBG Grant Agreement for more information on the procurement requirements.

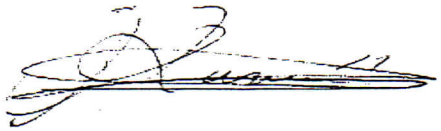
MEA and the EECBG Technical Assistance Team would like to be sure that you are aware of the following additional energy project funding sources that are available in case you wish to consider implementing future energy projects:

- EmPOWER Programs. These Maryland utility rebate programs (e.g., for lighting and HVAC) include:
  - Pepco: https://www.pepco.com
- MEA's Jane E. Lawton Loan Program. This Maryland state program has a limited amount of energy efficiency loan funding available that local governments are eligible for. The minimum loan size is $40,000 so this could be useful for projects that need a substantial amount of additional funding. For more information, browse to http://energy.maryland.gov/incentives/state-local/janeelawton.asp.

If you decide to leverage non-ARRA financial resources to expand your EECBG project beyond the scope estimated to be fundable using your grant, please keep in mind that if you commingle other funds with your EECBG grant for additional measures, you will be required to comply with all ARRA reporting requirements.

Contact your Account Manager if you'd like to discuss this report in more detail.

Sincerely,



Mohamed Kamara
MEA Technical Assistance Team Energy Auditor
Khepra Energy Group
mkamara@khepragroup.com

Maryland Energy
ADMINISTRATION
Powering Maryland's Future

HISTORIC PRESERVATION REVIEW FOR EECBG

Project No.: 2010-126-431 FB **Type:** EECBG

Applicant: Town of Seat Pleasant - Municipal Center

Address: 6301 Addison Road

Seat Pleasant, Maryland 20743 **County:** Prince George's

Date of Property (Structure): 1965

Recorded in MIHP: NO

46 Year Old Building

MEA Determination: EXEMPT MULTIPLE UNDERTAKINGS

EE Lighting and Weather Stripping

Fred B. Shoken

Fred Shoken, MEA QP

Review Date: 2/16/2011

Attachment B: Part 1- Maryland EECBG Waste Management Template
WASTE MATERIAL ESTIMATING WORKSHEET

EECBG Grant Recipient: Town of Seat Pleasant

Date: March 14, 2011

Submitted by: Kyrthlyn Rhoda

Instructions: 1) For each waste material, provide an estimate of the total amount of waste (in pounds) that will be generated through your Maryland EECBG project.
2) Additional waste streams can be added using the blank spaces in the column entitled waste material.
3) Fluorescent light bulbs and PCB-containing lighting ballasts must be recycled- neither of these waste streams should be sent to a landfill (see notes 1 and 2 below).
4) Lead paint and asbestos abatement/removal must be handled by a contractor certified by the Maryland Department of the Environment (MDE). The certified contractor will recommend the required disposal procedures on a case by case basis (see notes 3 and 4 below).
5) If you have any questions about how to disposition a particular waste material, please contact your MEA project manager before proceeding.

Provide a brief description of your proposed plan for disposal, including the names of recycling facilities you intend to use for each waste type.

The **Town of Seat Pleasant** plans to up-grade the lighting systems and weather-seal the Municipal Center. The contractor will handle all materials and waste resulting from the construction and will comply with any and all applicable regulations and codes.

- All used material will be delivered to our designated equipment recycling contractor.
- Where recyclable metals are deemed waste during and following demolition and construction (ductwork, wiring, etc.), such materials will be transported to a local metals recycling facility.
- *Hazardous Waste*: Should County personnel or any contractor discover materials suspected of containing hazardous materials (HAZMAT), all work at the site that would disturb such materials will be halted. A HAZMAT testing firm will be engaged to perform testing in compliance with the U.S. Environmental Protection Agency (EPA) testing guidance and procedures, using a NVLAP laboratory. Should materials be discovered that are not in compliance with EPA or EPD rules, a remediation contractor licensed by EPD will be engaged to develop a remediation plan compliant with all state and federal regulations and procedures, including notification to EPD in accordance with state regulation.

Documentation: All construction and recycling contractors shall provide the **Town of Seat Pleasant** with documentation of the type and quantity of materials collected and a statement of disposition and compliance with this plan and all appropriate state and federal regulations. Such records will be retained by the **Town of Seat Pleasant**.

Name of the recycling Facility:

Brown Station Household Hazardous Waste

11611 Whitehouse Road

Upper Marlboro, MD

Waste material	Total Amount Generated (lbs)	Amount Diverted from Landfill by Reuse, Salvage, or Recycle (lbs)	Amount Sent to Landfill (lbs)	Percent Diverted from Landfill (%)
Metal				
Wood				
Roofing Material	0			
Appliances	0			
Glass	0			
Fluorescent Light Bulbs[1]	271	271	0	100
PCB-containing Lighting Ballasts[2]				
Lead Paint[3]	0			
Asbestos[4]	0			
General Construction Waste				

[1] Fluorescent light bulbs contain mercury, a type of hazardous waste. In Maryland, compact fluorescent light bulbs containing mercury have been categorized as a universal waste in order to encourage recycling. All fluorescent light bulbs which require disposal as part of the Maryland EECBG program must be recycled- no mercury-containing fluorescent light bulbs should be disposed of in a landfill. A list of private fluorescent light bulb recyclers can be found on the Maryland Department of the Environment (MDE) website at http://www.mde.state.md.us/assets/document/CFL_recyclers.pdf. Some Maryland counties recycle fluorescent lights.

[2] Some types of fluorescent lighting ballasts contain polychlorinated biphenyls (PCBs). While PCBs are a type of hazardous waste, PCB-containing lighting ballasts are designated as a universal waste in Maryland in order to encourage recycling. All PCB-containing lighting ballasts that require disposal as part of a project funded through Maryland's EECBG program must be disposed of through a ballast recycler. A list of ballast recyclers can be obtained from the MDE website at http://www.mde.maryland.gov/Programs/LandPrograms/Recycling/SpecialProjects/collection/resources.asp.

[3] Prior to 1978, some paints contained lead. If the potential for lead paint is identified during the course of a Maryland EECBG project, a MDE accredited lead inspector (http://www.mde.state.md.us/Programs/LandPrograms/LeadCoordination/homeOwners/search/inspector.asp) must be brought in to identify the lead hazard and make recommendations on how to manage the lead paint, including disposal, should it be present.

[4] If asbestos is encountered in the course of a Maryland EECBG project, a MDE accredited asbestos contractor (http://www.mde.maryland.gov/assets/document/licensed_contractors.pdf) must be brought in to make recommendations on how to best contain, manage, or remove the asbestos contamination. Should the contractor identify the need for asbestos removal, all asbestos disposal must be completed in a manner dictated by the MDE accredited asbestos contractor.